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EXAMINER	
TRAN, ELLEN C	

ART UNIT	PAPER NUMBER
2134	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/553,454	MERRY ET AL.	
	Examiner	Art Unit	
	Ellen C Tran	2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-13 and 15-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-13 and 15-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1 This action is responsive to communication: amendment filed on 1 June 2004, the original application was filed on 19 April 2000.

2. Due to amendment claims 1-4, 6-13, and 15-18 are currently pending in this application. Claims 1 and 10 are independent claims. Claims 5 and 14 have been withdrawn. Previously independent claims 4 and 13 have been amended so that they are dependent on Claims 1 and 10.

Response to Arguments

3. Applicant's arguments filed 1 June 2004 have been fully considered but they are not persuasive.

In response to applicant's argument beginning on page 9, '*rejection of claims 4 and 13 are no longer applicable because they are now dependent on claims 1 and 10.*' The Office agrees that the 1st Office Action does not show claims 4 and 13 only because of the modification, see the below for the updated rejection of these claims based on Alasia ('717) and Koltal ('812).

In response to applicant's argument on page 10, that *"Alasia ('717) provides only a single level, lens-decodable, security feature"*. The Office does not agree.Alias clearly shows that different phases of encryption for multiple latent images that can require more than one-type of lenses. However the 1st Office Action never suggested that '717 alone taught all of the components of independent claims 1 or 10, a 103 rejection was used to teach independent claims 1 and 10, in the previous Office Action as well as below. It is shown that the combination of '717 and '812 teach a security device having two different independent layers of security, see '717 col. 1, line 63 though col. 2, line 2 "for a latent

image integrated into a source image" and see '812 col. 5, lines 43-50 "in which the hidden image is only readable digitally using an electronic software based filter"

In response to applicant's arguments beginning on page 13, "in order to establish a prima facie case of obviousness, the Examiner must meet three requirements". For the motivation to combine '717 and '812 see col. 3, lines 55 et seq., both inventions '717 and '812 are methods to prevent counterfeiting utilizing hidden images. In addition both references cite previous patent by Alasia 3,937,565.

The Office disagrees with the applicant's suggestion that both prior arts show only one level of decoding. Both prior arts show multiple levels (phases) of encoding as well as decoding. The reason the references were combined is that '812 builds on the prior art of '717 to include an electronic software based filter, whereas '717 only indicates a lenses manufactured to software scheme selected to encode the latent image(s). The method of '717 utilizes a special lens that is matched to the computer program to decode. The method '812 also utilizes a computer like '717 to produce hidden images however in '812 one application produces hidden images that are only readable digitally using a software-based filter. Hence the encoding/decoding is done on two levels as indicated by both references with multiple latent images encode using separate and independent phases. In addition the decoding of these multiple latent images can be done by alternate means, for example images that can be seen with a lens or lenses – '717, another example by encoding information digitally into the image that can only be decoded using a software program – '812.

Also for the motivation to combine '717, '812, and '370 see col. 1, lines 6 et seq. which is stated in the below action. '370 like '717 and '812 is a method to prevent

counterfeiting. It is obvious to combine inventions that all have the same function to prevent counterfeiting. In addition '370 also references previous patent by Alasia 3,937,565, which is in all references.

In addition although not shown in 1st Office Action the references '717 and '812 show all the features of the claimed invention as well as for claims 6-9 and 15-18, the combination of '370, '717, and '812 is just another example. Both rejections for claims 6-9 and 15-18 are documented on the following pages.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1-4, 6-13, and 15-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Alasia U.S. Patent No. 5,708,717 (hereinafter '717) in view of Koltai et al., U.S. Patent No. 6,104,812 (hereinafter '812).

As to independent claim 10, "An image encoding method for producing an electronic security device image from one or more electronic source images, said security device image being adaptable for printing onto a document to secure said document against data alteration, said method comprising the steps: (a) applying a selected software lens to a first said image said source images and thereby producing a deflected image" is taught in '717 col. 1, lines 5-11 "This invention relates generally to a method and apparatus, as implemented by a software program on a computer system, for producing counterfeit-deterring scrambled or coded indicia images,

typically in a printed form. This method and system are capable of combining a source image with a latent image so the latent image is visible only when viewed through a special decoder lens" (i.e. "electronic security device image" same as "coded indicia images") and (i.e. "secure said document against data alteration" same as "counterfeit-deterring") and (i.e. "latent image" same as "deflected image");

"(b) applying an encryption function to said deflected image or a second said source image and producing an encrypted image; (c) overlaying said deflected and encrypted images and producing therefrom said security device image" is taught in '717 col., 1 line 63 thru col. 2, line 2 "Additionally, a system is needed whereby scrambled latent images can be integrated into a source image, or individual color component thereof, so that the source image is visible to the unaided eye and the latent image is visible only upon decoding. Also needed is the ability to incorporate multiple latent images, representing different "phases", into the source image for added security" (i.e. "encryption encoding" same as "scramble latent images");

"whereby neither of said first and second said source images is visible upon viewing said security device image" is shown in '717 col. 8, line 34 through col. 9, line 5 "Each color plate 45, 47, 49, and 51 can be independently operated on by any of the S.I. process implemented. In this case, a hidden image technique (or rasterization in single color) is performed ... Encoding algorithms are applied by the S.I. software to merge latent images with visible images to create a new scrambled "tif" file ... the final image with the resolution necessary to maintain and reveal the hidden latent images upon decoding";

"and wherein each of said deflected and encrypted images is preserved and identifiable by means of a predetermined feature such that either of said deflected and encrypted images may be decoded without interfering with an ability to separately decode the other of said deflected and encrypted images" is disclosed in '717 col. 10, lines 59-67 ""the user can select a different base code for each image. This is especially useful when the user wants to create and overly of different sets of text that will be viewed together, yet be seen as separate words when decoded";

"whereby said deflected image is configured for detecting therefrom said first source image by decoding by means of: (i) a physical lenticular lens corresponding to said software lens being manually applied to a printing of said security image; and/or visible only when viewed through a special decoder lens" is taught in '717 col. 12, lines 32-37 "Another technique cross embossed rastering, might use one frequency of lens density on the vertical plane and yet another frequency on the horizontal plane. The user would then check each latent image by rotating the lens. Yet another technique would include lenses which varying in frequency and /or refractive characteristics across the face of a single lens";

the following is not taught in '717: **"(ii) computer decoding processing applying said software lens to said deflected image, each said decoding means being selectable according to a user's choice without interference from any prior use of either or both said decoding means to detect said first source image and said encrypted image is configured for detecting therefrom either said deflected image or said second source image solely by means of computer decoding processing applying a**

decryption function corresponding to said encryption function to said encrypted image" however '812 teaches "the hidden image is only readable digitally using a software based filter" (i.e. "solely" same as "only") and (i.e. "computer decoder processing" same as "software based filter" in col. 5, lines 43-58.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of producing counterfeit-deterring images taught in '717 to include a method only allowing a computer based program to decode the images created. One of ordinary skill in the art would have been motivated to perform such a modification to increase security of printed documentation see '812 (see col. 3, lines 55 et seq.) "In view of the shortcoming of the prior art, it is an object of the present invention to increase the security and anti-counterfeiting capabilities of a variety of media, ... so that the secondary image is visible to a viewer only when a decoder is used".

As to dependent claims 11, "wherein said security device image includes a plurality of said deflected images are produced, each said deflected images produced from one of said images, and interlaced to form an interlaced image and said interlaced deflected image is overlaid with said encrypted image" is taught in '717 col. 11, line 60 through col. 12, line 3 "Referring now to FIG. 21, the interface screen for an S.I. Raster operation is shown. The S.I. Raster allows the user to mix two images together where one of the images becomes latent 230 to the other which is visible 232. The latent image will interlace with the visible image following the gray scale values of that image ... Additionally, the latent image might consist of a one, two, or three multi-

phased image as created using previous interface screens for multi-phased images and saved in an appropriate file."

As to dependent claims 12, "wherein said software lens is selected from the group comprising line lenses, curved lenses and bitmap lenses" is shown in '717 col. 2, lines 7-13 and col. 4, lines 43-46 "The latent image--in digitized form--can be scrambled for decoding by a variety of lenticular lenses as selected by the user, with each lens having different optical properties such as different line densities per inch, and/or a different radius of curvature for the lenticulas." and "Yet another objective of the present invention is to provide a counterfeit-deterrent method and apparatus, as implemented by a software program on a computer system, wherein a bitmap source image is used (instead of a gray scale image) to create hidden images behind single color source images or sections of source images".

As to dependent claim 13, "An image decoding method for detecting the presence of one or more latent source images within a security device image produced by an encoding method according to claim 10 whereby said security device image comprises said overlaid deflected and encrypted images, said decoding method comprising the steps:" is taught in '812 col. 4 lines 12-19 "The present invention further relates to a software method and apparatus for digitally incorporating secondary images into a primary image. The secondary image-in digitized form-can be measured for decoding by a variety of optical and electronic decoders selected by the user. Different degrees of hiding may also be selected wherein the secondary image is rotated or layered with respect to other secondary images";

"(a) separating said overlaid encrypted and deflected images according to said predetermined feature to provide a first deflected image according to said overlaid deflected image and said encrypted image" is disclosed in '717 col. 2 lines 13-17 "Different degrees of scrambling might also be selected wherein the latent image is divided up into a higher multiplicity of lines or elements. For decoding purposes, the multiplicity of elements would be a function of the lens density";

"(b) applying to said encrypted image said decryption function corresponding to the encryption function used to produce said encrypted image and producing therefrom a decrypted image, said decrypted image being either a second deflected image according to said overlaid deflected image or said second source image" is taught in '717 col. 2, lines 8-10 "The latent image – in digitized form-can be scrambled for decoding by a variety of lenticular lens as selected by the user";

"(c) deflection decoding means comprising means for applying to said deflected image, or to said decrypted image if said decrypted image corresponds to a deflected image, a software lens corresponding to the software lens used to produce said deflected image and producing therefrom a deflection decoded image." is shown in '717 col. 2, lines 17-20 "The source image is then rasterized, or divided up into a series of lines equal in number to the lines making up the scrambled latent images. Generally, when hard copy images are printed, the image is made up of a series of "printers dots" which vary in density according to the colors found in the various component parts of the image".

As to dependent claim 15, "and further including iteratively evaluating whether said decoded image corresponds to said first said source image by applying

on each iteration either a different position of said software lens or other different lens parameter, until either said decoded image is determined to correspond to said first source image or all available lens positions and/or parameters have been applied" is shown in '812 col. 10, line 24 through col. 11, line 49 "The decoder preferably selects the "data-holder" portions of the dots, pixels etc., using a statistical sampling method, for example to activated the decoder and make the hidden indicial visible to the user ... In a third exemplary embodiment, the hidden image may be based on variable parameters, rather than a fixed parameters. In this exemplary embodiment, the following variable parameters may be considered: ... security (such as, data protection and protection against reproduction)".

As to dependent claim 16, "wherein said evaluation means uses a scoring algorithm to calculate a score based on pixel statistics calculated for each iteratively produced deflection decoded image" is taught in '812 col. 11, lines 7-26 "the characteristics of the decoding device, such as simple optical decoders for reading optical codes made on the principle of a simple optical filter with different geometrical forms using periodical or random filtering patterns complex optical decoders for reading optical codes with different optical (magnifier, reverse, prismatic diminishing etc.) effects simple electronic decoders for reading optical codes with software simulation of functions of the optical decoders without electronic recognition advanced electronic decoders for reading optical codes with software simulation of functions of the optical decoders with electronic recognition complex user programmable electronic decoders for reading direct digital codes which are also programmable by the users".

As to dependent claim 17, "wherein said deflection decoded image is determined to correspond to said source image when a relatively large change occurs in said score from one said iteration to the next" is shown in '812 col. 10, lines 58-67 "the characteristics of the reproduction process the minimal size and shape of the applicable dot or minimal width of the thinnest applicable line the applicable minimum space between the elementary dots or lines".

As to dependent claim 18, "further comprising means for outputting either said deflection decoded image when it has been determined to correspond to said source image or an error message if no such determination is made" is disclosed in '812 col. 12 lines 47-53 "The process detects errors relating to each selection, and displays an appropriate error message. Based upon the input settings selected, the various operations will be performed, e.g. hide one secondary image and save the results to an output file".

As to independent claim 1, "A computer operated encoding system" of the method of claim 10 and is therefore rejected under the same rationale stated above.

As to dependent claims 2-4 and 6-9, these claims contain substantially similar subject matter as claims 11-14 and 16-18; therefore they are rejected along similar rationale.

6. **Claims 6-9 and 15-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over '717 in further view of '812, in further view of Brosh et al. U.S. Patent No. 5,303,370 (hereinafter '370).

As to dependent claims 6 and 15, the following is not taught in exact terminology in the combination of '717 and '812:

"and further including iteratively evaluating whether said decoded image corresponds to said first said source image by applying on each iteration either a different position of said software lens or other different lens parameter, until either said decoded image is determined to correspond to said first source image or all available lens positions and/or parameters have been applied" however '370 teaches "To verify that the card is genuine, the user views the encrypted image through the authenticator. If the encrypted image has been counterfeited or tampered with, it will be immediately evident, as the image will not be decoded or will appear with superimposed black lines. As a further check on the authenticity of the encrypted image, the color mask may be so arranged that when the authenticator is rotated 90 degrees, the user observes a rainbow pattern, and the image of the indicium returns to its encrypted form" in col. 2 lines 41-50.

- It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of producing counterfeit-deterring images taught in '717 and '812 to include an authentication method. One of ordinary skill in the art would have been motivated to perform such a modification to provide a useful invention to prevent counterfeiting see '370 (see col. 1, lines 6 et seq.) "This invention is useful in a wide variety of applications including authenticating the origin of branded merchandise or identification cards".

As to dependent claims 7 and 16, "wherein said evaluation means uses a scoring algorithm to calculate a score based on pixel statistics calculated for each

iteratively produced deflection decoded image" is taught in '812 col. 11, lines 7-26 "the characteristics of the decoding device, such as simple optical decoders for reading optical codes made on the principle of a simple optical filter with different geometrical forms using periodical or random filtering patterns complex optical decoders for reading optical codes with different optical (magnifier, reverse, prismatic diminishing etc.) effects simple electronic decoders for reading optical codes with software simulation of functions of the optical decoders without electronic recognition advanced electronic decoders for reading optical codes with software simulation of functions of the optical decoders with electronic recognition complex user programmable electronic decoders for reading direct digital codes which are also programmable by the users".

As to dependent claims 8 and 17, "wherein said deflection decoded image is determined to correspond to said source image when a relatively large change occurs in said score from one said iteration to the next" is shown in '370 col. 2, lines 46-50 "As a further check on the authenticity of the encrypted image, the color mask may be so arranged that when the authenticator is rotated 90 degrees, the user observes a rainbow pattern, and the image of the indicium returns to its encrypted form".

As to dependent claims 9 and 18, "further comprising means for outputting either said deflection decoded image when it has been determined to correspond to said source image or an error message if no such determination is made" is disclosed in '812 col. 12 lines 47-53 "The process detects errors relating to each selection, and displays an appropriate error message. Based upon the input settings selected, the various operations will be performed, e.g. hide one secondary image and save the results to an output file".

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen C Tran whose telephone number is (703) 305-8917. "**After 26 October 2004, the examiner can be reached at (571) 272-3842".** The examiner can normally be reached from 6:30 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory A Morse can be reached on (703) 308-4789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Ellen Tran
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14 October 2004